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Study on Neutrino Interaction Using T2K Beam at KamLAND

T2K experiment which is a long-baseline neutrino oscillation experiment in Japan measures CP-phase of neutrino. Super-Kamiokande which is a 50-kton water Cerenkov detector in Kamioka-mine are used as a far detector. KamLAND which is a 1-kton liquid scintillator detector is also in the Kamioka-mine. Due to the close distance between Super-Kamiokande and KamLAND, T2K neutrino events are detected also at KamLAND. KamLAND can perform unique studies making use of its features especially for low energy neutrino interactions and neutron productions and so on.
I performed predictions of T2K events at KamLAND using simulations.
The results indicate KamLAND detected ~ 100 T2K events so far.
Currently the statistics are limited, but this will increase by 4 times by the end of 2026. I present some basic strategies and results of the predictiosn with some status of cooperations between T2K and KamLAND collaborations.

Mini-abstract

KamLAND is detecting and analyzing T2K neutrino events.

Experiment/Collaboration

KamLAND Collaboration

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